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10/099,930	03/13/2002	Michael R. Klardie	14484	2702

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INTELLECTUAL PROPERTY DEPARTMENT  
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MINNEAPOLIS, MN 55402-1498

EXAMINER

BUMGARNER, MELBA N

ART UNIT	PAPER NUMBER
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3732

16

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/099,930

Applicant(s)

KLARDIE ET AL. *cl*

Examiner

Melba Bumgarner

Art Unit

3732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45, 47-51, 53-63, 65, 68-86 and 89 is/are rejected.
- 7) ☒ Claim(s) 46, 52, 64, 66, 67, 87 and 88 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 7, 10, 14. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species II of figures 18 and 19 in Paper No. 15 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Information Disclosure Statement***

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "94", "D", and "F". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The abstract of the disclosure is objected to because it should avoid using phrases which can be implied, such as, "The disclosure concerns," "The present invention is," etc. Correction is required. See MPEP § 608.01(b).

Art Unit: 3732

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "the vent having a slit" in claim 86 and "two slits formed in the top of the cap" in claim 88.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-30, 33-43, 49, 54, 57-61, 70-72, 77-85, and 89 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, it is not clear whether the dental implant is intended to be positively claimed, for example "wherein the press fit mechanism squeezes the collar". In claims 11, 14, and 49, it is unclear what is mean by (cylinder-shaped) body is (generally) conical. In claim 15, it is unclear what is meant by "references an external abutment feature", i.e. is it a feature on the geometry or the implant. In claims 16 and 17, recitation of "the implant table" lacks sufficient antecedent basis. In claim 34, "the channels" and "the inner circumferential angled surface" lack sufficient antecedent basis. Claim 36 is not further limiting the claimed invention. In claims 54, 57, 70, and 77, recitation of "the side wall" lacks sufficient antecedent basis. In claim 89, it is unclear what is either side of the cover; i.e. what is the side.

***Claim Objections***

8. Claims 1, 4-6, 10, 15-17, 20, 23, 24, 27, 44, 47, 57, 59, 62, 64, 67, 73, 77, 82, and 86 are objected to because of the following informalities: correct grammatical errors in claim 1 line 10, claim 5, claim 6, and claim 10, in claim 4, "mechanisms" should be singular, in claims 15 and 27, correct "a external" and "a abutment", in claims 16 and 17, "the clinician" should read --a clinician--, in claims 44, 62, 64, and 73, --cap--should be inserted after "impression", in claims 47 and 67 "first" should read --second--, in claims 59 and 82, correct "theirs", in claim 73, delete "is", in claims 20, 23, 24, 57, and 77, "the cap" should read --the body--, in claim 86, correct "a inner". With the numerous errors cited, it is suggested that the applicants review the claimed language for additional errors that the examiner may have missed. Appropriate correction is required.

9. Claim 27 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 15. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3732

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-8, 11, 13, 16, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hurson (2002/0106610). Hurson discloses an impression cap 120 comprising a cylinder-shaped body 122 having a longitudinal axis 164, a first end 126 and a second end 124, at least the second end being provided with an opening, the opening extending longitudinally into the body from the second end forming an inner cavity 130, a press fit mechanism formed in the second end of the body, figure 7D, the press fit mechanism squeezed the collar of the dental implant, the portions of the press fit mechanism have an inner diameter equal to or greater than the outer diameter of the collar. As to claim 2, an inner circumferential angled surface is located at the second end of the body and having a size and shape complementary to an outer upper shoulder of the circumferential collar of the dental implant as seen in figure 8A. As to claim 3, the press fit mechanism comprises a circumferential flange extending downward from the body, the flange having an inner squeezing surface (figure 8B). As to claim 4, the press fit mechanism further comprises a curved relief 136 between the inner circumferential angled surface and the inner squeezing surface, the relief forming a gap between the impression cap and the implant when the impression cap is positioned on the implant. As to claims 5 and 6, the flange further comprises a tapered surface, the tapered surface extending downward from the squeezing surface and away from the implant. As to claims 7 and 8, the flange having a bottom end, the flange

Art Unit: 3732

further comprising an outer angled surface, the outer angled surface extending downward and inward to the bottom end of the flange. As to claim 11 as understood, the body is "generally conical", at 124. As to claim 13, the impression cap has a vent positioned at the first end of the cap. As to claims 16 and 17, the impression cap being elastic [0088] line 4. Patentable weight is not given to the intended use of the impression cap. As to claim 19, the body comprises a side wall having an outer surface and at least one circumferential rib protruding outward from the outer surface of the side wall 166.

12. Claims 1-3, 5, 7, 9, 10, 13, 14, 16, 17, 19, 33, 44, 47, 48, 50, 51, 53, 54, 68, 73, and 74 are rejected under 35 U.S.C. 102(e) as being anticipated by Halldin et al. (2003/0082499). Halldin et al. disclose an impression cap 201 comprising a cylinder-shaped body 203 having a longitudinal axis, a first end and a second end, at least the second end being provided with an opening, the opening extending longitudinally into the body from the second end forming an inner cavity, a press fit mechanism 209 formed in the second end of the body (figure 7d), the portions of the press fit mechanism have an inner diameter equal to the outer diameter of the collar (figure 8a). As to claim 2, an inner circumferential angled surface is located at the second end of the body and having a size and shape complementary to an outer upper shoulder of the circumferential collar of the dental implant. As to claim 3, the press fit mechanism comprises a circumferential flange extending downward from the body, the flange having an inner squeezing surface. As to claim 5, the flange further comprises a tapered surface, the tapered surface extending downward from the squeezing surface and away from the implant. As to claim 7, the flange having a bottom end, the flange further comprising an

Art Unit: 3732

outer angled surface, the outer angled surface extending downward and inward to the bottom end of the flange. As to claim 9, the body having an inner surface wall, the inner circumferential angled surface angling outward from the inner surface wall, wherein a channel is formed in the inner circumferential angled surface (figure 7b), such that a vent from the cavity to the outside is formed when the impression cap is positioned on the implant. As to claim 10, there are at least two channels formed. As to claims 13 and 14, the impression cap has a vent 217 positioned at the first end of the cap. Patentable weight is not given to the intended use of the vent. As to claims 16 and 17, the impression cap being elastic [0145] line 3. Patentable weight is not given to the intended use of the impression cap. As to claim 19, the body comprises a side wall having an outer surface and at least one circumferential rib protruding outward from the outer surface of the side wall 242. As to claim 33, the impression cap further comprising a second channel formed in the inner circumferential angled surface, such that a second vent from the cavity to the outside is formed when the impression cap is positioned on the implant. As to claim 44, Halldin et al. show the impression cap comprising a first groove formed in the inner surface adjacent the second end (figure 7b). As to claim 47, the impression cap further comprises a second groove formed in the inner surface adjacent the second end. As to claim 48, the grooves are positioned in the inner surface in opposing fashion. As to claim 50, an abutment flat is formed in the inner surface. As to claim 68, the cylinder-shaped body has a generally conical inner cavity 243. As to claim 73, Halldin et al. show an external geometry formed on the outer surface. As to claim 74, the impression cap has a generally conical inner cavity (figure 8b).



Art Unit: 3732

13. Claims 1-3, 5, 7, 16, 17, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Grande et al. (6,068,478). Grande et al. disclose an impression cap 4 comprising a cylinder-shaped body having a longitudinal axis, a first end and a second end, at least the second end being provided with an opening, the opening extending longitudinally into the body from the second end forming an inner cavity 40, a press fit mechanism 42 formed in the second end of the body (figure 1E), the press fit mechanism squeezes the collar of the dental implant, the portions of the press fit mechanism have an inner diameter equal to the outer diameter of the collar. As to claim 2, an inner circumferential angled surface 21 is located at the second end of the body and having a size and shape complementary to an outer upper shoulder of the circumferential collar 11 of the dental implant. As to claim 3, the press fit mechanism comprises a circumferential flange extending downward from the body, the flange having an inner squeezing surface. As to claim 5, the flange further comprises a tapered surface, the tapered surface extending downward from the squeezing surface and away from the implant. As to claim 7, the flange having a bottom end, the flange further comprising an outer angled surface, the outer angled surface extending downward and inward to the bottom end of the flange. As to claims 16 and 17, the impression cap being elastic (column 4 line 40). Patentable weight is not given to the intended use of the impression cap. As to claim 19, the body comprises a side wall having an outer surface and at least one circumferential rib 43 protruding outward from the outer surface of the side wall. As to claim 20, the body comprises two circumferential ribs protruding outward from the outer surface of the side wall, wherein the two circumferential ribs are spaced apart along the longitudinal axis of the cap. As

Art Unit: 3732

to claim 21, at least one of the circumferential ribs has a flat surface. Patentable weight is not given to the intended use of the feature.

14. Claims 62, 63, 65, 69, 73-76, and 85 are rejected under 35 U.S.C. 102(e) as being anticipated by Hurson (6,672,871). Hurson discloses an impression cap 200 comprising a cylinder-shaped body having a longitudinal axis, a first end and a second end, at least the second end being provided with an opening to engage an abutment piece, the opening extending longitudinally into the body from the second end forming an inner cavity, the body further having an inner surface 104 and an outer surface, the impression cap further comprising an abutment flat formed in the inner surface and a bulge 110 formed on the abutment flat which extends inward, as seen in figure 7A. As to claim 63, the cap further comprises an exterior geometry. Patentable weight is not given to the intended use of the geometry. As to claim 65, the first end of the cap is substantially closed forming a top. As to claim 69, the impression cap further comprises a press fit mechanism formed in the second end of the body 112. As to claim 73, Hurson shows an external geometry formed on the outer surface. As to claim 74, the impression cap has a generally conical inner cavity. As to claim 75, the outer surface is generally conical.

15. Claim 86 is rejected, as understood, under 35 U.S.C. 102(e) as being anticipated by Porter et al. (2001/0034008). Porter et al. disclose an impression cap 90 comprising a cylinder-shaped body having a longitudinal axis, a first end and a second end, at least the second end being provided with an opening 96, the opening extending longitudinally into the body from the second end forming an inner cavity, the body having an inner surface and an outer surface, wherein the first end is substantially closed forming a top

Art Unit: 3732

94, the tip comprising a vent, the vent having a slit 92. Patentable weight is not given to the intended use of the slit.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 11, 12, 15, 23, 25, 27, 45, 49, 57, and 58 are rejected, as understood, under 35 U.S.C. 103(a) as being unpatentable over Halldin et al. Halldin et al. disclose an impression cap that shows the limitations as described above; however, they do not show the cylinder-shaped body being conical. It would be an obvious matter of choice to one of ordinary skill in the art as to the body being conical. The specific shaped is not disclosed as critical to the claimed invention, nor is a "conical" shape shown. As to claim 12, the inner cavity of the impression cap has an inner geometry which comprises an internal abutment flat 243 and has a size and shape complementary to an abutment piece which may be secured in the implant (figure 8b). As to claims 15 and 27, as understood, the impression cap has an external geometry 241, which references an external abutment feature. It would be an obvious matter of choice to one of ordinary skill in the art as to the intended use of the feature. As to claim 23, Halldin et al. show a first vertical rib protruding outward from the outer surface of the side wall; however, they do not show the groove extending from the first end to the second end. It would have been an obvious matter of choice to one having ordinary skill in the art as to the length

Art Unit: 3732

of the rib on the outer wall. The extension of the rib is not disclosed as critical to the claimed invention. As to claim 25, Halldin et al. show a second vertical rib, wherein the vertical ribs are spaced 180 degrees apart from one another around the periphery of the cap. As to claim 45, the first end of the cap forms a top, it would be an obvious matter of choice to one of ordinary skill in the art as to size of the top being substantially closed. As to claim 58, Halldin et al. show a second vertical rib, the ribs spaced apart from one another around the periphery of the cap.

18. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Halldin et al. in view of Porter et al. Halldin et al. disclose an impression cap that shows the limitations as described above; however, they do not show the impression cap being color coded. Porter et al. teach an impression cap color coded [0043] line 3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the impression cap of Halldin et al. to be color coded. One would be motivated in order to use the color to indicate its size in view of Porter et al. Porter et al. also teach the corresponding components coded in the same color.

19. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grande et al. Grande et al. disclose an impression cap that shows the limitations as described above; however, they do not show the circumferential ribs comprising at least one concave surface around their periphery. Grande et al. show indented portions of the circumferential ribs. It would have been an obvious matter of choice to one of ordinary skill in the art as to the specific geometry (concave) of the indented portions. The specific shape is not disclosed as critical to the claimed invention.

Art Unit: 3732

20. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halldin et al. in view of Kumar (6,561,805) and further in view of Larson et al. (5,540,876). Halldin et al. disclose an impression cap that shows the limitations as described above; however, they do not show the cap gamma sterilized. Kumar discloses an impression cap (coping) sterilized (column 1 line 47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to sterilize the cap as in Kumar. One would be motivated in order to have a sterile component before insertion into the patient's mouth and reduce chances for infection or complications in view of Kumar. The modified impression cap of Halldin et al. and Kumar further does not show the cap gamma sterilized. Larson et al. teach gamma sterilization of materials including plastics and items of medical applications (column 2 lines 40, 65). It would have been obvious to one having ordinary skill in the art to further modify the impression cap to be gamma sterilized. One would be motivated in order to be able to sterilize in bulk, to sterilize pre-packaged materials for easier handling, and to use a less expensive radiation process than electron radiation in view of Larson et al. As to claim 29, the impression cap of Halldin et al. is plastic [0145] line 2. As to claim 30, Halldin et al. shows the plastic material selected so as to provide sufficient elasticity to allow formation of the press fit mechanism but not being easily deformable to ensure proper use. It would have been an obvious matter of choice to one of ordinary skill in the art as to the specific type of plastic, since it is not disclosed as critical to the claimed invention.

21. Claims 31, 32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar in view of Larson et al. Kumar discloses an impression cap

Art Unit: 3732

(coping) sterilized (column 1 line 47); however, they do not show the cap gamma sterilized. Larson et al. teach gamma sterilization of materials including plastics and items of medical applications (column 2 lines 40, 65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the impression cap of Kumar to be made of plastic material of Larson et al. and gamma sterilized. One would be motivated in order to be able to sterilize in bulk, to sterilize pre-packaged materials for easier handling, and to use a less expensive radiation process than electron radiation in view of Larson et al. As to claim 32, the modified impression cap of Kumar and Larson et al. does not show the cap made from polypropylene. It would have been an obvious matter of choice to one of ordinary skill in the art as to the specific plastic of polypropylene, since it is not disclosed as critical to the claimed invention. The specification states that the impression cap be made of any material compatible with dental usage or the impressing process, suitably the material is elastic or moldable material. As to claim 33, the features of the cap have not been positively claimed.

22. Claims 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halldin et al. in view of Grande et al. Halldin et al. disclose an impression cap that shows the limitations as described above; however, they do not show the body comprising two circumferential ribs. Grande et al. teach the body comprising two circumferential ribs protruding outward from the outer surface of the side wall, wherein the two circumferential ribs are spaced apart along the longitudinal axis of the body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the impression cap of Halldin et al. to have a second

Art Unit: 3732

circumferential rib. One would be motivated in order to aid in anchoring the cap in the impression compound and prevent the displacement or twisting of the cap in view of Grande. As to claim 56, Grande et al. show indented portions of the circumferential ribs. It would have been an obvious matter of choice to one of ordinary skill in the art as to the specific geometry (concave) of the indented portions.

23. Claims 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurson (6,672,871) in view of Halldin et al. Hurson discloses an impression cap that shows the limitations as described above; however, Hurson does not show a first vertical rib protruding outward from the outer surface of the side wall. Halldin et al. teach a vertical rib protruding outward from the outer surface of the side wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cap of Hurson to include a vertical rib. One would be motivated, as it appears from figures 7a and 7b, in order to have it function as structural support to the circumferential rib in the prolongation region of Halldin et al. and as such structural enhancements are known in the art. It would be an obvious matter of choice to one of ordinary skill in the art as to the length of the rib on the outer wall. As to claim 71, Halldin et al. show a second vertical rib, the ribs spaced apart from one another around the periphery of the cap. As to claim 72, Halldin et al. show the second vertical rib thickens at its "bottom".

24. Claims 77-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurson (6,672,871) in view of Grande et al. Hurson discloses an impression cap that shows the limitations as described above; however, Hurson does not show the body comprising two circumferential ribs. Grande et al. teach the body comprising two

Art Unit: 3732

circumferential ribs protruding outward from the outer surface of the side wall, wherein the two circumferential ribs are spaced apart along the longitudinal axis of the body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the impression cap of Hurson to have a second circumferential rib in order to aid in anchoring the cap in the impression compound and prevent the displacement or twisting of the cap in view of Grande. As to claim 78, Grande et al. show at least one of the circumferential ribs having a flat surface. It would be an obvious matter of choice to one of ordinary skill in the art as to the intended use of the surface. As to claim 79, Grande et al. show indented portions of the circumferential ribs. It would have been an obvious matter of choice to one of ordinary skill in the art as to the specific geometry (concave) of the indented portions.

#### ***Allowable Subject Matter***

25. Claims 46, 52, 64, 66, 67, 87, and 88 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

26. Claims 24, 26, 35-43, 59-61, 80-84, and 89 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melba Bumgarner whose telephone number is 703-305-0740. The examiner can normally be reached on Mon-Fri.



Art Unit: 3732

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (703) 308-2582. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.

A handwritten signature in cursive script, reading "Melba Bumgarner".

Melba Bumgarner  
Patent Examiner